

HAWAII ADMINISTRATIVE RULES

TITLE 11

DEPARTMENT OF HEALTH

CHAPTER 268

HAZARDOUS WASTE MANAGEMENT

LAND DISPOSAL RESTRICTIONS

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### SUBCHAPTER A

#### GENERAL

§11-268-1 Purpose, scope and applicability. (a) This chapter identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances under which an otherwise prohibited waste may continue to be land disposed.

(b) Except as specifically provided otherwise in this

chapter or chapter 11-261, the requirements of this chapter apply to persons who generate or transport hazardous waste and owners and operators of hazardous waste treatment, storage, and disposal facilities.

(c) Restricted wastes may continue to be land disposed as follows:

(1) Where persons have been granted an extension to the effective date of a prohibition under subchapter C, with respect to those wastes covered by the extension;

(2) [Reserved];

(3) Wastes that are hazardous only because they exhibit a hazardous characteristic, and which are otherwise prohibited under this chapter, or 40 CFR part 148, are not prohibited if the wastes:

(i) Are disposed into a nonhazardous or hazardous injection well as defined under 40 CFR 146.6(a); and

(ii) Do not exhibit any prohibited characteristic of hazardous waste identified in subchapter C of chapter 11-261 at the point of injection.

(4) Wastes that are hazardous only because they exhibit a hazardous characteristic, and which are otherwise prohibited under this chapter, are not prohibited if the wastes meet any of the following criteria, unless the wastes are subject to a specified method of treatment other than DEACT in section 11-268-40, or are D003 reactive cyanide:

(i) The wastes are managed in a treatment system which subsequently discharges to waters of the United States pursuant to a permit issued under section 402 of the Federal Clean Water Act; or

(ii) The wastes are treated for purposes of the pretreatment requirements of section 307 of the Federal Clean Water Act; or

(iii) The wastes are managed in a zero discharge system engaged in Federal Clean Water Act-equivalent treatment as defined in section 11-268-37(a); and

(iv) The wastes no longer exhibit a prohibited characteristic at the point of land disposal (i.e., placement in a surface impoundment).

(d) The requirements of this chapter shall not affect the availability of a waiver under section 121(d)(4) of the Federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended (42 U.S.C. 9621(d)(4)).

(e) The following hazardous wastes are not subject to any provision of chapter 11-268:

(1) Waste generated by small quantity generators of less than 100 kilograms of non-acute hazardous waste or less than 1 kilogram of acute hazardous waste per month, as defined in section 11-261-5;

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- (2) Waste pesticides that a farmer disposes of pursuant to section 11-262-70;
- (3) Wastes identified or listed as hazardous for which the department has not promulgated land disposal prohibitions or treatment standards;
- (4) De minimis losses of characteristic wastes to wastewaters are not considered to be prohibited wastes and are defined as losses from normal material handling operations (e.g. spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials); minor leaks of process equipment, storage tanks or containers; leaks from well-maintained pump packings and seals; sample purgings; and relief device discharges; discharges from safety showers and rinsing and cleaning of personal safety equipment; rinsate from empty containers or from containers that are rendered empty by that rinsing; and laboratory wastes not exceeding one per cent of the total flow of wastewater into the facility's headworks on an annual basis, or with a combined annualized average concentration not exceeding one part per million in the headworks of the facility's wastewater treatment or pretreatment facility.

(f) Universal waste handlers and universal waste transporters (as defined in section 11-260-10) are exempt from section 11-268-7 and section 11-268-50 for the hazardous wastes listed below. These handlers are subject to regulation under chapter 11-273.

- (1) Batteries as described in section 11-273-2;
- (2) Pesticides as described in section 11-273-3; and
- (3) Thermostats as described in section 11-273-4.

(g) All references in tables and appendices to provisions of the Code of Federal Regulations shall be construed to mean the State rule analogue of the referenced federal regulation (for example, 40 CFR 260.1 shall be construed to mean section 11-260-1 of the Hawaii Administrative Rules). [Eff 6/18/94; am 3/13/99; comp ] (Auth: HRS §§342J-4, 342J-31, 342J-35)  
(Imp: 40 C.F.R. §268.1)

§11-268-2 Definitions applicable in this chapter. When used in this chapter the following terms have the meanings given below:

- (a) "Halogenated organic compounds" or "HOCs" means those compounds having a carbon-halogen bond which are listed under appendix III to this chapter.
- (b) "Hazardous constituent" or "constituents" means those constituents listed in appendix VIII to chapter 11-261.
- (c) ``Land disposal'' means placement in or on the land,

except in a corrective action management unit, and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, underground mine or cave, or placement in a concrete vault, or bunker intended for disposal purposes.

- (d) "Nonwastewaters" are wastes that do not meet the criteria for wastewaters in subsection (f).
- (e) "Polychlorinated biphenyls" or "PCBs" are halogenated organic compounds defined in accordance with 40 CFR 761.3 (1998).
- (f) "Wastewaters" are wastes that contain less than one percent by weight total organic carbon (TOC) and less than one percent by weight total suspended solids (TSS).
- (g) ``Debris'' means solid material exceeding a 60 mm particle size that is intended for disposal and that is: A manufactured object; or plant or animal matter; or natural geologic material. However, the following materials are not debris: Any material for which a specific treatment standard is provided in subchapter D, chapter 11-268, namely lead acid batteries, cadmium batteries, and radioactive lead solids; Process residuals such as smelter slag and residues from the treatment of waste, wastewater, sludges, or air emission residues; and Intact containers of hazardous waste that are not ruptured and that retain at least 75% of their original volume. A mixture of debris that has not been treated to the standards provided by section 11-268-45 and other material is subject to regulation as debris if the mixture is comprised primarily of debris, by volume, based on visual inspection.
- (h) ``Hazardous debris'' means debris that contains a hazardous waste listed in subchapter D of chapter 11-261, or that exhibits a characteristic of hazardous waste identified in subchapter C of chapter 11-261.
- (i) "Underlying hazardous constituent" means any constituent listed in section 11-268-48, Table UTS-Universal Treatment Standards, except fluoride, vanadium, and zinc, which can reasonably be expected to be present at the point of generation of the hazardous waste, at a concentration above the constituent-specific UTS treatment standards.
- (j) "Inorganic metal-bearing waste" is one for which EPA has established treatment standards for metal hazardous constituents, and which does not otherwise contain significant organic or cyanide content as described in section 11-268-3(c)(1), and is specifically listed in

appendix XI. [Eff 6/18/94; am 3/13/99; comp  
] (Auth: HRS §§342J-4, 342J-31, 342J-  
35) (Imp: 40 C.F.R. §268.2)

§11-268-3 Dilution prohibited as a substitute for treatment. (a) Except as provided in subsection (b), no generator, transporter, handler, or owner or operator of a treatment, storage, or disposal facility shall in any way dilute a restricted waste or the residual from treatment of a restricted waste as a substitute for adequate treatment to achieve compliance with subchapter D, to circumvent the effective date of a prohibition in subchapter C, to otherwise avoid a prohibition in subchapter C, or to circumvent a land disposal prohibition imposed by this chapter.

(b) Dilution of wastes that are hazardous only because they exhibit a characteristic in treatment systems which include land-based units which treat wastes subsequently discharged to a water of the United States pursuant to a permit issued under section 402 of the Federal Clean Water Act (CWA), or which treat wastes in a CWA-equivalent treatment system, or which treat wastes for the purposes of pretreatment requirements under section 307 of the Federal CWA is not impermissible dilution for purposes of this section unless a method other than DEACT has been specified in section 11-268-40 as the treatment standard, or unless the waste is a D003 reactive cyanide wastewater or nonwastewater.

(c) Combustion of the hazardous waste codes listed in Appendix XI of this chapter is prohibited, unless the waste, at the point of generation, or after any bona fide treatment such as cyanide destruction prior to combustion, can be demonstrated to comply with one or more of the following criteria (unless otherwise specifically prohibited from combustion):

- (1) The waste contains hazardous organic constituents or cyanide at levels exceeding the constituent-specific treatment standard found in section 11-268-48;
- (2) The waste consists of organic, debris-like materials (e.g., wood, paper, plastic, or cloth) contaminated with an inorganic metal-bearing hazardous waste;
- (3) The waste, at point of generation, has reasonable heating value such as greater than or equal to 5000 BTU per pound;
- (4) The waste is co-generated with wastes for which combustion is a required method of treatment;
- (5) The waste is subject to federal and/or State requirements necessitating reduction of organics (including biological agents); or
- (6) The waste contains greater than 1% Total Organic Carbon (TOC). [Eff 6/18/94; am 3/13/99; comp  
] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40

C.F.R. §268.3) (Imp: 40 C.F.R. §268.3)

§11-268-4 Treatment surface impoundment exemption. (a) Wastes which are otherwise prohibited from land disposal under this chapter may be treated in a surface impoundment or series of impoundments provided that:

- (1) Treatment of such wastes occurs in the impoundments;
- (2) The following conditions are met:
  - (i) Sampling and testing. For wastes with treatment standards in subchapter D and/or prohibition levels in subchapter C or RCRA section 3004(d) (42 U.S.C. 6924) (1984), the residues from treatment are analyzed, as specified in section 11-268-7 or section 11-268-32, to determine if they meet the applicable treatment standards or where no treatment standards have been established for the waste, the applicable prohibition levels. The sampling method, specified in the waste analysis plan under section 11-264-13 or 11-265-13, must be designed such that representative samples of the sludge and the supernatant are tested separately rather than mixed to form homogeneous samples.
  - (ii) Removal. The following treatment residues (including any liquid waste) must be removed at least annually: residues which do not meet the treatment standards promulgated under subchapter D; residues which do not meet the prohibition levels established under subchapter C or imposed by RCRA section 3004(d) (42 U.S.C. 6924) (1984) (where no treatment standards have been established); residues which are from the treatment of wastes prohibited from land disposal under subchapter C (where no treatment standards have been established and no prohibition levels apply); or residues from managing listed wastes. If the volume of liquid flowing through the impoundment or series of impoundments annually is greater than the volume of the impoundment or impoundments, this flow-through constitutes removal of the supernatant for the purpose of this requirement.
  - (iii) Subsequent management. Treatment residues may not be placed in any other surface impoundment for subsequent management.
  - (iv) Recordkeeping: Sampling and testing and recordkeeping provisions of sections 11-264-13 and 11-265-13 apply.
- (3) The impoundment meets the design requirements of subsection 11-264-221(c) or 11-265-221(a), regardless

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that the unit may not be new, expanded, or a replacement, and be in compliance with applicable ground water monitoring requirements of subchapter F of chapter 11-264 or chapter 11-265 unless:

- (i) Exempted pursuant to subsection 11-264-221(d) or (e), or to subsection 11-265-221(c) or (d); or,
  - (ii) Upon application by the owner or operator, the director, after notice and an opportunity to comment, has granted a waiver of the requirements on the basis that the surface impoundment:
    - (A) Has at least one liner, for which there is no evidence that such liner is leaking;
    - (B) Is located more than one-quarter mile from an underground source of drinking water; and
    - (C) Is in compliance with generally applicable ground water monitoring requirements for facilities with permits; or,
  - (iii) Upon application by the owner or operator, the director, after notice and an opportunity to comment, has granted a modification to the requirements on the basis of a demonstration that the surface impoundment is located, designed, and operated so as to assure that there will be no migration of any hazardous constituent into ground water or surface water at any future time.
- (4) The owner or operator submits to the director a written certification that the requirements of paragraph 11-268-4(a)(3) have been met. The following certification is required:

"I certify under penalty of law that the requirements of paragraph (a)(3) of section 11-268-4 of the Hawaii Administrative Rules have been met for all surface impoundments being used to treat restricted wastes. I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

(b) Evaporation of hazardous constituents as the principal means of treatment is not considered to be treatment for purposes of an exemption under this section. [Eff 6/18/94; am 3/13/99; comp ] (Auth: HRS §§342J-4, 342J-31, 342J-35)  
(Imp: 40 C.F.R. §268.4)

§11-268-5 [Reserved]

§11-268-6 [Reserved]



§11-268-7 Testing, tracking, and recordkeeping requirements for generators, treaters, and disposal facilities.

(a) Requirements for generators:

- (1) Determine if the waste has to be treated before being land disposed, as follows: A generator of a hazardous waste must determine if the waste has to be treated before it can be land disposed. This is done by determining if the hazardous waste meets the treatment standards in section 11-268-40 or 11-268-45. This determination can be made in either of two ways: testing the waste or using knowledge of the waste. If the generator tests the waste, testing would normally determine the total concentration of hazardous constituents, or the concentration of hazardous constituents in an extract of the waste obtained using test method 1311 in ``Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,'' EPA Publication SW-846, as referenced in section 11-260-11, depending on whether the treatment standard for the waste is expressed as a total concentration or concentration of hazardous constituent in the waste's extract. In addition, some hazardous wastes must be treated by particular treatment methods before they can be land disposed. These treatment standards are also found in section 11-268-40, and are described in detail in section 11-268-42, Table 1. These wastes do not need to be tested (however, if they are in a waste mixture, other wastes with concentration level treatment standards would have to be tested). If a generator determines they are managing a waste that displays a hazardous characteristic of ignitability, corrosivity, reactivity, or toxicity, they must comply with the special requirements of section 11-268-9 in addition to any applicable requirements in this section.
- (2) If the waste does not meet the treatment standard: With the initial shipment of waste to each treatment or storage facility, the generator must send a one-time written notice to each treatment or storage facility receiving the waste, and place a copy in the file. The notice must include the information in column ``11-268-7(a)(2)'' of the Generator Paperwork Requirements Table in subsection (a)(4). No further notification is necessary until such time that the waste or facility change, in which case a new notification must be sent and a copy placed in the generator's file.
- (3) If the waste meets the treatment standard at the original point of generation:
  - (i) With the initial shipment of waste to each treatment, storage, or disposal facility, the generator must send a one-time written notice to

each treatment, storage, or disposal facility receiving the waste, and place a copy in the file. The notice must include the information indicated in column ``11-268-7(a)(3)'' of the Generator Paperwork Requirements Table in subsection (a)(4) and the following certification statement, signed by an authorized representative: "I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in chapter 11-268, subchapter D, Hawaii Administrative Rules. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment."

- (ii) If the waste changes, the generator must send a new notice and certification to the receiving facility, and place a copy in their files. Generators of hazardous debris excluded from the definition of hazardous waste under section 11-261-3(f) are not subject to these requirements.
- (4) For reporting, tracking and recordkeeping when exceptions allow certain wastes that do not meet the treatment standards to be land disposed: There are certain federal exemptions from the requirement that hazardous wastes meet treatment standards before they can be land disposed. These include, but are not limited to case-by-case extensions under 40 CFR 268.5, disposal in a no-migration unit under 40 CFR 268.6, or a national capacity variance or case-by-case capacity variance under 40 CFR subpart C. If a generator's waste is so exempt under federal law and if the generator has received a similar exemption from the department with respect to that waste, then with the initial shipment of waste, the generator must send a one-time written notice to each land disposal facility receiving the waste. The notice must include the information indicated in column ``11-268-7(a)(4)'' of the Generator Paperwork Requirements Table below. If the waste changes, the generator must send a new notice to the receiving facility, and place a copy in their files.

Generator Paperwork Requirements Table

Required information	Sec. 11-268-7 (a)(2)	Sec. 11-268-7 (a)(3)	Sec. 11-268-7 (a)(4)	Sec. 11-268-7 (a)(9)
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1. EPA Hazardous Waste and Manifest numbers.....	x	x	x	x
2. Statement: this waste is not prohibited from land disposal.....			x	
3. The waste is subject to the LDRs. The constituents of concern for F001-F005, and F039, and underlying hazardous constituents (for wastes that are not managed in a Clean Water Act (CWA) or CWA-equivalent facility), unless the waste will be treated and monitored for all constituents. If all constituents will be treated and monitored, there is no need to put them all on the LDR notice.....	x	x		
4. The notice must include the applicable wastewater/nonwastewater category (see sections 11-268-2(d) and (f)) and subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanide)	x	x		
5. Waste analysis data (when available).....	x	x	x	
6. Date the waste is subject to the prohibition.....			x	
7. For hazardous debris, when treating with the alternative treatment technologies provided by section 11-268-45: the contaminants subject to treatment, as described in section 11-268-45(b); and an indication that these contaminants are being treated to comply with section 11-268-45.....	x		x	
8. A certification is needed (see applicable section for exact wording).....		x		x

(5) If a generator is managing and treating prohibited waste in tanks, containers, or containment buildings regulated under section 11-262-34 to meet applicable LDR treatment standards found in section 11-268-40, the generator must develop and follow a written waste analysis plan which describes the procedures they will carry out to comply with the treatment standards. (Generators treating hazardous debris under the alternative treatment standards of Table 1, section 11-268-45, however, are not subject to these waste analysis requirements.) The plan must be kept on site in the generator's records, and the following requirements must be met:

- (i) The waste analysis plan must be based on a detailed chemical and physical analysis of a representative sample of the prohibited waste(s) being treated, and contain all information necessary to treat the waste(s) in accordance with the requirements of this chapter, including the selected testing frequency.
- (ii) Such plan must be kept in the facility's on-site files and made available to inspectors.
- (iii) Wastes shipped off-site pursuant to this section must comply with the notification requirements of paragraph 11-268-7(a)(3).

(6) If a generator determines that the waste is restricted

based solely on his or her knowledge of the waste, all supporting data used to make this determination must be retained on-site in the generator's files. If a generator determines that the waste is restricted based on testing this waste or an extract developed using the test method 1311 in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846, as referenced in section 11-260-11, and all waste analysis data must be retained on-site in the generator's files.

- (7) If a generator determines that he or she is managing a restricted waste that is excluded from the definition of hazardous or solid waste or exempt from regulation under sections 11-261-2 through 11-261-6 subsequent to the point of generation (including deactivated characteristic hazardous waste managed in wastewater treatment systems subject to the Clean Water Act (CWA) as specified in section 11-261-4(a)(2), or are CWA-equivalent), he or she must place a one-time notice stating such generation, subsequent exclusion from the definition of hazardous or solid waste or exemption from regulation under sections 11-261-2 through 11-261-6, and the disposition of the waste, in the facility's file.
- (8) Generators must retain on-site a copy of all notices, certifications, waste analysis data, and other documentation produced pursuant to this section for at least three years from the date that the waste that is the subject of such documentation was last sent to on-site or off-site treatment, storage, or disposal. The three year record retention period is automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as requested by the director. The requirements of this subsection apply to solid wastes even when the hazardous characteristic is removed prior to disposal, or when the waste is excluded from the definition of hazardous or solid waste under sections 11-261-2 through 11-261-6, or exempted from regulation, subsequent to the point of generation.
- (9) If a generator is managing a lab pack containing hazardous wastes and wishes to use the alternative treatment standard for lab packs found at section 11-268-42(c):
  - (i) With the initial shipment of waste to a treatment facility, the generator must submit a notice that provides the information in column ``Sec. 11-268-7(a)(9)'' in the Generator Paperwork Requirements Table of paragraph (a)(4), and the following certification. The certification, which must be

signed by an authorized representative and must be placed in the generator's files, must say the following: "I certify under penalty of law that I personally have examined and am familiar with the waste and that the lab pack contains only wastes that have not been excluded under appendix IV to chapter 11-268, Hawaii Administrative Rules and that this lab pack will be sent to a combustion facility in compliance with the alternative treatment standards for lab packs at subsection 11-268-42(c), Hawaii Administrative Rules. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment."

- (ii) No further notification is necessary until such time that the wastes in the lab pack change, or the receiving facility changes, in which case a new notice and certification must be sent and a copy placed in the generator's file.
- (iii) If the lab pack contains characteristic hazardous wastes (D001-D043), underlying hazardous constituents (as defined in section 11-268-2(i)) need not be determined.
- (iv) The generator must also comply with the requirements in paragraphs (a)(6) and (a)(7).
- (10) Small quantity generators with tolling agreements pursuant to subsection 11-262-20(e) must comply with the applicable notification and certification requirements of subsection (a) of this section for the initial shipment of the waste subject to the agreement. Such generators must retain on-site a copy of the notification and certification, together with the tolling agreement, for at least three years after termination or expiration of the agreement. The three-year record retention period is automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as requested by the director.

(b) Treatment facilities must test their wastes according to the frequency specified in their waste analysis plans as required by section 11-264-13 (for permitted TSDs) or 11-265-13 (for interim status facilities). Such testing must be performed as provided in paragraphs (b)(1), (b)(2) and (b)(3) of this section.

- (1) For wastes with treatment standards expressed as concentrations in the waste extract (TCLP), the owner or operator of the treatment facility must test an extract of the treatment residues, using test method 1311 (the Toxicity Characteristic Leaching Procedure, described in "Test Methods for Evaluating Solid Waste,

Physical/Chemical Methods," EPA Publication SW-846, as incorporated by reference in section 11-260-11), to assure that the treatment residues extract meet the applicable treatment standards.

- (2) For wastes with treatment standards expressed as concentrations in the waste, the owner or operator of the treatment facility must test the treatment residues (not an extract of such residues) to assure that they meet the applicable treatment standards.
- (3) A one-time notice must be sent with the initial shipment of waste to the land disposal facility. A copy of the notice must be placed in the treatment facility's file.
  - (i) No further notification is necessary until such time that the waste or receiving facility change, in which case a new notice must be sent and a copy placed in the treatment facility's file.
  - (ii) The one-time notice must include these requirements:

Treatment Facility Paperwork Requirements Table

Required information	Sec. 11-268-7(b)
1. EPA Hazardous Waste and Manifest numbers.....	x
2. The waste is subject to the LDRs. The constituents of concern for F001-F005, and F039, and underlying hazardous constituents (for wastes that are not managed in a Clean Water Act (CWA) or CWA-equivalent facility), unless the waste will be treated and monitored for all constituents. If all constituents will be treated and monitored, there is no need to put them all on the LDR notice.....	x
3. The notice must include the applicable wastewater/ nonwastewater category (see sections 11-268-2(d) and (f)) and subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanide).....	x
4. Waste analysis data (when available).....	x
5. A certification statement is needed (see applicable section for exact wording).....	x

- (4) The treatment facility must submit a one-time certification signed by an authorized representative with the initial shipment of waste or treatment residue of a restricted waste to the land disposal facility. The certification must state: "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe

that the treatment process has been operated and maintained properly so as to comply with the treatment standards specified in section 11-268-40, Hawaii Administrative Rules without impermissible dilution of the prohibited waste. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

- (i) A copy of the certification must be placed in the treatment facility's on-site files. If the waste or treatment residue changes, or the receiving facility changes, a new certification must be sent to the receiving facility, and a copy placed in the file.
  - (ii) Debris excluded from the definition of hazardous waste under section 11-261-3(e) (i.e., debris treated by an extraction or destruction technology provided by Table 1, section 11-268-45, and debris that the director has determined does not contain hazardous waste), however, is subject to the notification and certification requirements of subsection (d) rather than the certification requirements of this paragraph.
  - (iii) For wastes with organic constituents having treatment standards expressed as concentration levels, if compliance with the treatment standards is based in whole or in part on the analytical detection limit alternative specified in section 11-268-40(d), the certification, signed by an authorized representative, must state the following: "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion units as specified in section 11-268-42, Table 1, Hawaii Administrative Rules. I have been unable to detect the nonwastewater organic constituents, despite having used best good-faith efforts to analyze for such constituents. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."
- (5) If the waste or treatment residue will be further managed at a different treatment or storage facility, the treatment, storage or disposal facility sending the waste or treatment residue off-site must comply with the notice and certification requirements applicable to

generators under this section.

- (6) Where the wastes are recyclable materials used in a manner constituting disposal subject to the provisions of subsection 11-266-20(b) regarding treatment standards and prohibition levels, the owner or operator of a treatment facility (i.e., the recycler) is not required to notify the receiving facility, pursuant to paragraph (b)(4) of this section. With each shipment of such wastes the owner or operator of the recycling facility must submit a certification described in paragraph (b)(5) of this section, and a notice which includes the information listed in paragraph (b)(4) of this section (except the manifest number) to the director, or his or her delegated representative. The recycling facility also must keep records of the name and location of each entity receiving the hazardous waste-derived product.

(c) Except where the owner or operator is disposing of any waste that is a recyclable material used in a manner constituting disposal pursuant to subsection 11-266-20(b), the owner or operator of any land disposal facility disposing any waste subject to restrictions under this chapter must:

- (1) Have copies of the notice and certifications specified in subsection (a) or (b) of this section.
- (2) Test the waste, or an extract of the waste or treatment residue developed using test method 1311 (the Toxicity Characteristic Leaching Procedure), described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication SW-846 as incorporated by reference in section 11-260-11), to assure that the wastes or treatment residues are in compliance with the applicable treatment standards set forth in subchapter D of this chapter. Such testing must be performed according to the frequency specified in the facility's waste analysis plan as required by section 11-264-13 or 11-265-13.

(d) Generators or treaters who first claim that hazardous debris is excluded from the definition of hazardous waste under subsection 11-261-3(e) (i.e., debris treated by an extraction or destruction technology provided by Table 1, section 11-268-45, and debris that the director has determined does not contain hazardous waste) are subject to the following notification and certification requirements:

- (1) A one-time notification, including the following information, must be submitted to the director:
- (2) The notification must be updated if the debris is shipped to a different facility, and, for debris excluded under paragraph 11-261-2(e)(1), if a different type of debris is treated or if a different technology is used to treat the debris.



- (3) For debris excluded under paragraph 11-261-3(e)(1), the owner or operator of the treatment facility must document and certify compliance with the treatment standards of Table 1, section 11-268-45, as follows:
- (i) Records must be kept of all inspections, evaluations, and analyses of treated debris that are made to determine compliance with the treatment standards;
  - (ii) Records must be kept of any data or information the treater obtains during treatment of the debris that identifies key operating parameters of the treatment unit; and
  - (iii) For each shipment of treated debris, a certification of compliance with the treatment standards must be signed by an authorized representative and placed in the facility's files. The certification must state the following: "I certify under penalty of law that the debris has been treated in accordance with the requirements of section 11-268-45 of the Hawaii Administrative Rules. I am aware that there are significant penalties for making a false certification, including the possibility of fine and imprisonment. [Eff 6/18/94; am 3/13/99; comp 342J-35) (Imp: 40 C.F.R. §268.7)

§11-268-8 [Reserved]

§11-268-9 Special rules regarding wastes that exhibit a characteristic. (a) The initial generator of a solid waste must determine each EPA Hazardous Waste Number (waste code) applicable to the waste in order to determine the applicable treatment standards under subchapter D of this chapter. For purposes of chapter 11-268, the waste will carry the waste code for any applicable listed waste (11-261, subchapter D). In addition, where the waste exhibits a characteristic, the waste will carry one or more of the characteristic waste codes (11-261, subchapter C), except when the treatment standard for the listed waste operates in lieu of the treatment standard for the characteristic waste, as specified in subsection (b) of this section. If the generator determines that their waste displays a hazardous characteristic (and is not DOO1 nonwastewaters treated by CMBST, RORGS, or POLYM of section 11-268-42, Table 1), the generator must determine the underlying hazardous constituents (as defined in section 11-268-2(i)), in the characteristic waste.

(b) Where a prohibited waste is both listed under chapter 11-261, subchapter D and exhibits a characteristic under chapter

11-261, subchapter C, the treatment standard for the waste code listed in chapter 11-261, subchapter D will operate in lieu of the standard for the waste code under chapter 11-261, subchapter C, provided that the treatment standard for the listed waste includes a treatment standard for the constituent that causes the waste to exhibit the characteristic. Otherwise, the waste must meet the treatment standards for all applicable listed and characteristic waste codes.

(c) In addition to any applicable standards determined from the initial point of generation, no prohibited waste which exhibits a characteristic under chapter 11-261, subchapter C may be land disposed unless the waste complies with the treatment standards under subchapter D of this chapter.

(d) Wastes that exhibit a characteristic are also subject to section 11-268-7 requirements, except that once the waste is no longer hazardous, a one-time notification and certification must be placed in the generators or treaters files and sent to the department. The notification and certification that is placed in the generators or treaters files must be updated if the process or operation generating the waste changes and/or if the solid waste management facility receiving the waste changes. However, the generator or treater need only notify the department on an annual basis if such changes occur. Such notification and certification should be sent to the department by the end of the calendar year, but no later than December 31.

(1) The notification must include the following information:

- (i) Name and address of the solid waste management facility receiving the waste shipment; and
- (ii) A description of the waste as initially generated, including the applicable EPA hazardous waste code(s), treatability group(s), and underlying hazardous constituents (as defined in section 11-268-2(i)), unless the waste will be treated and monitored for all underlying hazardous constituents. If all underlying hazardous constituents will be treated and monitored, there is no requirement to list any of the underlying hazardous constituents on the notice.

(2) The certification must be signed by an authorized representative and must state the language found in paragraph 11-268-7(b)(5).

- (i) If treatment removes the characteristic but does not treat underlying hazardous constituents, then the certification found in section 11-268-7(b)(5)(iv) applies.
- (ii) [Reserved] [Eff 6/18/94; am 3/13/99; comp  
] (Auth: HRS §§342J-4, 342J-31,  
342J-35) (Imp: 40 C.F.R. §268.9)

SUBCHAPTER B

[RESERVED]

§11-268-10 through §11-268-29 [Reserved]

SUBCHAPTER C

PROHIBITIONS ON LAND DISPOSAL

§11-268-30 Waste specific prohibitions -- wood preserving wastes. (a) The following wastes are prohibited from land disposal: the wastes specified in chapter 11-261 as EPA Hazardous Waste numbers F032, F034, and F035.

(b) Effective May 12, 1999, the following wastes are prohibited from land disposal: soil and debris contaminated with F032, F034, F035; and radioactive wastes mixed with EPA Hazardous waste numbers F032, F034, and F035.

(c) Between May 12, 1997 and May 12, 1999, soil and debris contaminated with F032, F034, F035; and radioactive waste mixed with F032, F034, and F035 may be disposed in a landfill or surface impoundment only if such unit is in compliance with the requirements specified in section 11-268-5(h)(2).

(d) The requirements of subsections (a) and (b) do not apply if:

- (1) The wastes meet the applicable treatment standards specified in chapter 11-268 subchapter D;
- (2) Persons have been granted an exemption from a prohibition pursuant to a petition under 40 CFR 268.6, with respect to those wastes and units covered by the petition; and the petition is approved by the State pursuant to section 11-268-71;
- (3) The wastes meet the applicable alternate treatment standards established pursuant to a petition granted under 40 CFR 268.44; and the petition is approved by the State pursuant to section 11-268-51; or
- (4) Persons have been granted an extension to the effective date of a prohibition pursuant to 40 CFR 268.5, with respect to those wastes covered by the extension; and the extension is approved by the State pursuant to section 11-268-51.

(e) To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in section 11-268-40, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable Universal Treatment Standard levels of section 11-268-

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48, the waste is prohibited from land disposal, and all requirements of this chapter are applicable, except as otherwise specified. [Eff 6/18/94; am 3/13/99; comp ] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §268.30)

§11-268-31 Waste specific prohibitions -- Dioxin-containing wastes. (a) The dioxin-containing wastes specified in section 11-261-31 as EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, F027, and F028, are prohibited from land disposal unless the following condition applies:

- (1) The F020 - F023 and F026 - F028 dioxin-containing waste is contaminated soil and debris resulting from a response action taken under HRS chapter 128D or section 104 or 106 of the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) or a corrective action taken under HRS chapter 342J.
- (b) The F020 - F023 and F026 - F028 dioxin-containing wastes listed in paragraph (a)(1) of this section are prohibited from land disposal.
- (c) [Reserved]
- (d) The requirements of subsections (a) and (b) of this section do not apply if:
  - (1) The wastes meet the standards of subchapter D of this chapter; or
  - (2) [Reserved];
  - (3) [Reserved]. [Eff 6/18/94; comp ] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §268.31)

§11-268-32 [Reserved] [Eff 6/18/94; am 3/13/99; comp ] (Auth: HRS §§ 342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §268.32)

§11-268-33 Waste-specific prohibitions--organobromine wastes. (a) Effective November 4, 1998, the waste specified in section 11-261-32 as EPA Hazardous Waste Numbers K140, and in section 11-261-33 as EPA Hazardous Waste Number U408 are prohibited from land disposal. In addition, soils and debris contaminated with these wastes, radioactive wastes mixed with these hazardous wastes, and soils and debris contaminated with these radioactive mixed wastes, are prohibited from land disposal.

- (b) The requirements of subsection (a) do not apply if:
  - (1) The wastes meet the applicable treatment standards specified in subchapter D;
  - (2) Persons have been granted an exemption from prohibition

pursuant to a petition under 40 CFR 268.6, with respect to those wastes and units covered by the petition; and the petition is approved by the State pursuant to section 11-268-51;

- (3) The wastes meet the applicable treatment standards established pursuant to a petition granted under 40 CFR 268.44; and the petition is approved by the State pursuant to section 11-268-51;
- (4) Hazardous debris that has met treatment standards in section 11-268-40 or in the alternative treatment standards in section 11-268-45; or
- (5) Persons have been granted an extension to the effective date of a prohibition pursuant to 40 CFR 268.5, with respect to these wastes covered by the extension; and the extension is approved by the State pursuant to section 11-268-51.

(c) To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in section 11-268-40, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable Universal Treatment Standard levels of section 11-268-48, the waste is prohibited from land disposal, and all requirements of this chapter are applicable, except as otherwise specified. [Eff 6/18/94; am 3/13/99; comp ] (Auth: HRS §§ 342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §268.33)

§11-268-34 [Reserved] [Eff 6/18/94; am 3/13/99; comp ] (Auth: HRS §§ 342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §268.34)

§11-268-35 [Reserved] [Eff 6/18/94; am 3/13/99; comp ] (Auth: HRS §§ 342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §268.35)

§11-268-36 [Reserved] [Eff 6/18/94; am 3/13/99; comp ] (Auth: HRS §§ 342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §268.36)

§11-268-37 Waste specific prohibitions -- ignitable and corrosive characteristic wastes whose treatment standards were vacated. (a) The wastes specified in section 11-261-21 as D001 (and is not in the High TOC Ignitable Liquids Subcategory), and specified in section 11-261-22 as D002, that are managed in

systems other than those whose discharge is regulated under the federal Clean Water Act (CWA), or that inject in Class I deep wells regulated under the federal Safe Drinking Water Act (SDWA), or that are zero dischargers that engage in CWA-equivalent treatment before ultimate land disposal, are prohibited from land disposal. CWA-equivalent treatment means biological treatment for organics, alkaline chlorination or ferrous sulfate precipitation for cyanide, precipitation/sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or greater than these technologies.

(b) Effective February 10, 1994, the wastes specified in section 11-261-21 as D001 (and is not in the High TOC Ignitable Liquids Subcategory), and specified in section 11-261-22 as D002, that are managed in systems defined in 40 CFR 144.6(e) and 146.6(e) as Class V injection wells, that do not engage in CWA-equivalent treatment before injection, are prohibited from land disposal. [Eff 6/18/94; comp ] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §268.37)

§11-268-38 Waste specific prohibitions-newly identified organic toxicity characteristic wastes and newly listed coke by-product and chlorotoluene production wastes. (a) Effective on the effective date of this section, the wastes specified in section 11-261-32 as EPA Hazardous Waste numbers K141, K142, K143, K144, K145, K147, K148, K149, K150, and K151 are prohibited from land disposal. In addition, debris contaminated with EPA Hazardous Waste numbers F037, F038, K107-K112, K117, K118, K123-K126, K131, K132, K136, U328, U353, U359, and soil and debris contaminated with D012-D043, K141-K145, and K147-K151 are prohibited from land disposal. The following wastes that are specified in section 11-261-24, Table 1 as EPA Hazardous Waste numbers: D012, D013, D014, D015, D016, D017, D018, D019, D020, D021, D022, D023, D024, D025, D026, D027, D028, D029, D030, D031, D032, D033, D034, D035, D036, D037, D038, D039, D040, D041, D042, D043 that are not radioactive, or that are managed in systems other than those whose discharge is regulated under the Clean Water Act (CWA), or that are zero dischargers that do not engage in CWA-equivalent treatment before ultimate land disposal, or that are injected in Class I deep wells regulated under the Safe Drinking Water Act (SDWA), are prohibited from land disposal. CWA-equivalent treatment means biological treatment for organics, alkaline chlorination or ferrous sulfate precipitation for cyanide, precipitation/sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or better than these technologies.

(b) Radioactive wastes that are mixed with D018-D043 that

are managed in systems other than those whose discharge is regulated under the Clean Water Act (CWA), or that inject in Class I deep wells regulated under the Safe Drinking Water Act (SDWA), or that are zero dischargers that engage in CWA-equivalent treatment before ultimate land disposal, are prohibited from land disposal. CWA-equivalent treatment means biological treatment for organics, alkaline chlorination or ferrous sulfate precipitation for cyanide, precipitation/sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or greater than these technologies. Radioactive wastes mixed with K141-K145, and K147-K151 are also prohibited from land disposal. In addition, soil and debris contaminated with these radioactive mixed wastes are prohibited from land disposal.

(c) [Reserved]

(d) The requirements of subsections (a) and (b) do not apply if:

(1) The wastes meet the applicable treatment standards specified in subchapter;

(2) [Reserved]

(3) [Reserved]

(4) [Reserved]

(e) To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in section 11-268-40, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable subchapter D levels, the waste is prohibited from land disposal, and all requirements of chapter 11-268 are applicable, except as otherwise specified. [Eff 3/13/99; comp

] (Auth: HRS §§ 342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §268.38)

§11-268-39 Waste specific prohibitions--spent aluminum potliners; reactive; and carbamate wastes. (a) The wastes specified in section 11-261-32 as EPA Hazardous Waste numbers K156-159, and K161; and in section 11-261-33 as EPA Hazardous Waste numbers P127, P128, P185, P188-P192, P194, P196-P199, P201-P205, U271, U278-U280, U364, U367, U372, U373, U387, U389, U394, U395, U404, and U409-U411 are prohibited from land disposal. In addition, soil and debris contaminated with these wastes are prohibited from land disposal.

(b) The wastes identified in section 11-261-23 as D003 that are managed in systems other than those whose discharge is regulated under the Federal Clean Water Act (CWA), or that inject in Class I deep wells regulated under the Federal Safe Drinking Water Act (SDWA), or that are zero dischargers that engage in

CWA-equivalent treatment before ultimate land disposal, are prohibited from land disposal. This prohibition does not apply to unexploded ordnance and other explosive devices which have been the subject of an emergency response. (Such D003 wastes are prohibited unless they meet the treatment standard of DEACT before land disposal (see section 11-268-40)).

(c) The wastes specified in section 11-261-32 as EPA Hazardous Waste number K088 are prohibited from land disposal. In addition, soil and debris contaminated with this waste are prohibited from land disposal.

(d) On April 8, 1998, radioactive wastes mixed with K088, K156-K159, K161, P127, P128, P185, P188-P192, P194, P196-P199, P201-P205, U271, U278-U280, U364, U367, U372, U373, U387, U389, U394, U395, U404, and U409-U411 are also prohibited from land disposal. In addition, soil and debris contaminated with these radioactive mixed wastes are prohibited from land disposal.

(e) [Reserved]

(f) The requirements of subsections (a), (b), (c), and (d) do not apply if:

(1) The wastes meet the applicable treatment standards specified in subchapter D;

(2) [Reserved]

(3) [Reserved]

(4) [Reserved]

(g) To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards specified in section 11-268-40, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentrations in the waste extract or the waste, or the generator may use knowledge of the waste. If the waste contains constituents in excess of the applicable subchapter D levels, the waste is prohibited from land disposal, and all requirements of this chapter are applicable, except as otherwise specified. [Eff 3/13/99; comp

] (Auth: HRS §§ 342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §268.39)

## SUBCHAPTER D

### TREATMENT STANDARDS

§11-268-40 Applicability of treatment standards. (a) A prohibited waste identified in the table "Treatment Standards for Hazardous Wastes" may be land disposed only if it meets the requirements found in the table. For each waste, the table identifies one of three types of treatment standard requirements:

(1) All hazardous constituents in the waste or in the treatment residue must be at or below the values found in the table for that waste ("total waste standards");



or

- (2) The hazardous constituents in the extract of the waste or in the extract of the treatment residue must be at or below the values found in the table ("waste extract standards"); or
- (3) The waste must be treated using the technology specified in the table ("technology standard"), which are described in detail in section 11-268-42, Table 1-Technology Codes and Description of Technology-Based Standards.

(b) For wastewaters, compliance with concentration level standards is based on maximums for any one day, except for D004 through D011 wastes for which the previously promulgated treatment standards based on grab samples remain in effect. For all nonwastewaters, compliance with concentration level standards is based on grab sampling. For wastes covered by the waste extract standards, the test Method 1311, the Toxicity Characteristic Leaching Procedure found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846, as incorporated by reference in section 11-260-11, must be used to measure compliance. An exception is made for D004 and D008, for which either of two test methods may be used: Method 1311, or Method 1310, the Extraction Procedure Toxicity Test. For wastes covered by a technology standard, the wastes may be land disposed after being treated using that specified technology or an equivalent treatment technology approved by the director under the procedures set forth in section 11-268-42(b).

(c) When wastes with differing treatment standards for a constituent of concern are combined for purposes of treatment, the treatment residue must meet the lowest treatment standard for the constituent of concern.

(d) Notwithstanding the prohibitions specified in subsection (a) of this section, treatment and disposal facilities may demonstrate (and certify pursuant to section 11-268-7(b)(5)) compliance with the treatment standards for organic constituents specified by a footnote in the table "Treatment Standards for Hazardous Wastes" in this section, provided the following conditions are satisfied:

- (1) The treatment standards for the organic constituents were established based on incineration in units operated in accordance with the technical requirements of chapter 11-264, subchapter O, or based on combustion in fuel substitution units operating in accordance with applicable technical requirements;
- (2) The treatment or disposal facility has used the methods referenced in paragraph (d)(1) to treat the organic constituents; and
- (3) The treatment or disposal facility may demonstrate compliance with organic constituents if good-faith

analytical efforts achieve detection limits for the regulated organic constituents that do not exceed the treatment standards specified in this section by an order of magnitude.

(e) For characteristic wastes (D001-D003, and D012-D043) that are subject to treatment standards in the following table "Treatment Standards for Hazardous Wastes," all underlying hazardous constituents (as defined in section 11-268-2(i)) must meet Universal Treatment Standards, found in section 11-268-48, "Table UTS," prior to land disposal as defined in section 11-268-2(c).

(f) The treatment standards for F001-F005 nonwastewater constituents carbon disulfide, cyclohexanone, and/or methanol apply to wastes which contain only one, two, or three of these constituents. Compliance is measured for these constituents in the waste extract from test Method 1311, the Toxicity Characteristic Leaching Procedure found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846, as incorporated by reference in section 11-260-11. If the waste contains any of these three constituents along with any of the other 25 constituents found in F001-F005, then compliance with treatment standards for carbon disulfide, cyclohexanone, and/or methanol are not required.

(g) Between August 26, 1997 and August 26, 1998 the treatment standards for the wastes specified in section 11-261-32 as EPA Hazardous Waste numbers K156-K161; and in section 11-261-33 as EPA Hazardous Waste numbers P127, P128, P185, P188-P192, P194, P196-P199, P201-P205, U271, U277-U280, U364-U367, U372, U373, U375-U379, U381-U387, U389-U396, U400-U404, U407, and U409-U411; and soil contaminated with these wastes; may be satisfied by either meeting the constituent concentrations presented in the table "Treatment Standards for Hazardous Wastes" in this section, or by treating the waste by the following technologies: combustion, as defined by the technology code CMBST at section 11-268-42 Table 1, for nonwastewaters; and, biodegradation as defined by the technology code BIODG, carbon adsorption as defined by the technology code CARBN, chemical oxidation as defined by the technology code CHOXD, or combustion as defined as technology code CMBST at section 11-268-42 Table 1, for wastewaters.

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§11-268-41 Treatment standards expressed as concentrations in waste extract. For the requirements previously found in this section and for treatment standards in Table CCWE-Constituent Concentrations in Waste Extracts, refer to section 11-268-40. [Eff 6/18/94; am 3/13/99; comp ] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §268.41)

§11-268-42 Treatment standards expressed as specified technologies.

Note: For the requirements previously found in this section in Table 2-Technology-Based Standards By RCRA Waste Code, and Table 3-Technology-Based Standards for Specific Radioactive Hazardous Mixed Waste, refer to section 11-268-40.

(a) The following wastes in paragraphs (a)(1) and (a)(2) and in the table in section 11-268-40 "Treatment Standards for Hazardous Wastes," for which standards are expressed as a treatment method rather than a concentration level, must be treated using the technology or technologies specified in paragraphs (a)(1) and (a)(2) and Table 1.

- (1) Liquid hazardous wastes containing polychlorinated biphenyls (PCBs) at concentrations greater than or equal to fifty ppm but less than five-hundred ppm must be incinerated in accordance with the technical requirements of 40 CFR 761.70 or burned in high efficiency boilers in accordance with the technical requirements of 40 CFR 761.60. Liquid hazardous wastes containing polychlorinated biphenyls (PCBs) at concentrations greater than or equal to five-hundred ppm must be incinerated in accordance with the technical requirements of 40 CFR 761.70. Thermal treatment under this section must also be in compliance with applicable regulations in chapters 11-264, 11-265, and 11-266.
- (2) Nonliquid hazardous wastes containing halogenated organic compounds (HOCs) in total concentration greater than or equal to one-thousand mg/kg and liquid HOC-containing wastes that are prohibited under paragraph 11-268-32(e)(1) must be incinerated in accordance with the requirements of chapter 11-264, subchapter O, or chapter 11-265, subchapter O. These treatment standards do not apply where the waste is subject to a chapter 11-268, subchapter D, treatment standard for a specific HOC (such as a hazardous waste chlorinated solvent for which a treatment standard is established under subsection 11-268-41(a)).
- (3) A mixture consisting of wastewater, the discharge of which is subject to regulation under either section 402 or section 307(b) of the Federal Clean Water Act, and de minimis losses of materials from manufacturing

operations in which these materials are used as raw materials or are produced as products in the manufacturing process, and that meet the criteria of the D001 ignitable liquids containing greater than 10 percent total organic constituents (TOC) subcategory, is subject to the DEACT treatment standard described in Table 1 of this section. For purposes of this paragraph, de minimis losses include those from normal material handling operations (e.g., spills from the unloading or transfer of materials from bins or other containers, leaks from pipes, valves or other devices used to transfer materials); minor leaks from process equipment, storage tanks, or containers; leaks from well-maintained pump packings and seals; sample purgings; and relief device discharges.

Table 1.-Technology Codes and Description of Technology-Based Standards

Technology code	Description of technology-based standards
ADGAS:	Venting of compressed gases into an absorbing or reacting media (i.e., solid or liquid)-venting can be accomplished through physical release utilizing valves/piping; physical penetration of the container; and/or penetration through detonation.
AMLGM:	Amalgamation of liquid, elemental mercury contaminated with radioactive materials utilizing inorganic reagents such as copper, zinc, nickel, gold, and sulfur that result in a nonliquid, semi-solid amalgam and thereby reducing potential emissions of elemental mercury vapors to the air.
BIODG:	Biodegradation of organics or non-metallic inorganics (i.e., degradable inorganics that contain the elements of phosphorus, nitrogen, and sulfur) in units operated under either aerobic or anaerobic conditions such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (e.g., Total Organic Carbon can often be used as an indicator parameter for the biodegradation of many organic constituents that cannot be directly analyzed in wastewater residues).
CARBN:	Carbon adsorption (granulated or powdered) of non-metallic inorganics, organo-metallics, and/or organic constituents, operated such that a surrogate compound or indicator parameter has not undergone breakthrough (e.g., Total Organic Carbon can often be used as an indicator parameter for the adsorption of many organic constituents that cannot be directly analyzed in wastewater residues). Breakthrough occurs when the carbon has become saturated with the constituent (or indicator parameter) and substantial change in adsorption rate associated with that constituent occurs.
CHOXD:	Chemical or electrolytic oxidation utilizing the following oxidation reagents (or waste reagents) or combinations of reagents: (1) Hypochlorite (e.g. bleach); (2) chlorine; (3) chlorine dioxide; (4) ozone or UV (ultraviolet light) assisted ozone; (5) peroxides; (6) persulfates; (7) perchlorates; (8) permangantes; and/or (9) other oxidizing reagents of equivalent efficiency, performed in units operated such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (e.g., Total Organic Carbon can often be used as an indicator parameter for the oxidation of many organic constituents that cannot be directly analyzed in wastewater residues). Chemical oxidation specifically includes what is commonly referred to as alkaline chlorination.

CHRED:	Chemical reduction utilizing the following reducing reagents (or waste reagents) or combinations of reagents: (1) Sulfur dioxide; (2) sodium, potassium, or alkali salts or sulfites, bisulfites, metabisulfites, and polyethylene glycols (e.g., NaPEG and KPEG); (3) sodium hydrosulfide; (4) ferrous salts; and/or (5) other reducing reagents of equivalent efficiency, performed in units operated such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (e.g., Total Organic Halogens can often be used as an indicator parameter for the reduction of many halogenated organic constituents that cannot be directly analyzed in wastewater residues). Chemical reduction is commonly used for the reduction of hexavalent chromium to the trivalent state.
CMBST:	High temperature organic destruction technologies, such as combustion in incinerators, boilers, or industrial furnaces operated in accordance with the applicable requirements of 40 CFR part 264, subpart O, or 40 CFR part 265, subpart O, or 40 CFR part 266, subpart H, and in other units operated in accordance with applicable technical operating requirements; and certain non-combustive technologies, such as the Catalytic Extraction Process.
DEACT:	Deactivation to remove the hazardous characteristics of a waste due to its ignitability, corrosivity, and/or reactivity.
FSUBS:	Fuel substitution in units operated in accordance with applicable technical operating requirements.
HLVIT:	Vitrification of high level mixed radioactive wastes in units in compliance with all applicable radioactive protection requirements under control of the Nuclear Regulatory Commission.
IMERC:	Incineration of wastes containing organics and mercury in units operated in accordance with the technical operating requirements of 40 CFR part 264 subpart O and part 265 subpart O. All wastewater and nonwastewater residues derived from this process must then comply with the corresponding treatment standards per waste code with consideration of any applicable subcategories (e.g., High or Low Mercury Subcategories).
INCIN:	Incineration in units operated in accordance with the technical operating requirements of 40 CFR part 264 subpart O and part 265 subpart O.
LLEXT:	Liquid-liquid extraction (often referred to as solvent extraction) of organics from liquid wastes into an immiscible solvent for which the hazardous constituents have a greater solvent affinity, resulting in an extract high in organics that must undergo either incineration, reuse as a fuel, or other recovery/reuse and a raffinate (extracted liquid waste) proportionately low in organics that must undergo further treatment as specified in the standard.
MACRO:	Macroencapsulation with surface coating materials such as polymeric organics (e.g. resins and plastics) or with a jacket of inert inorganic materials to substantially reduce surface exposure to potential leaching media. Macroencapsulation specifically does not include any material that would be classified as a tank or container according to 40 CFR 260.10.
NEUTR:	Neutralization with the following reagents (or waste reagents) or combinations of reagents: (1) Acids; (2) bases; or (3) water (including wastewaters) resulting in a pH greater than 2 but less than 12.5 as measured in the aqueous residuals.
NLDBR:	No land disposal based on recycling.
PRECP:	Chemical precipitation of metals and other inorganics as insoluble precipitates of oxides, hydroxides, carbonates, sulfides, sulfates, chlorides, fluorides, or phosphates. The following reagents (or waste reagents) are typically used alone or in combination: (1) Lime (i.e., containing oxides and/or hydroxides of calcium and/or magnesium); (2) caustic (i.e., sodium and/or potassium hydroxides); (3) soda ash (i.e., sodium carbonate); (4) sodium sulfide; (5) ferric sulfate or ferric chloride; (6) alum; or (7) sodium sulfate. Additional flocculating, coagulation or similar reagents/processes that enhance sludge dewatering characteristics are not precluded from use.

RBERY:	Thermal recovery of Beryllium.
RCGAS:	Recovery/reuse of compressed gases including techniques such as reprocessing of the gases for reuse/resale; filtering/adsorption of impurities; remixing for direct reuse or resale; and use of the gas as a fuel source.
RCORR:	Recovery of acids or bases utilizing one or more of the following recovery technologies: (1) Distillation (i.e., thermal concentration); (2) ion exchange; (3) resin or solid adsorption; (4) reverse osmosis; and/or (5) incineration for the recovery of acid-Note: this does not preclude the use of other physical phase separation or concentration techniques such as decantation, filtration (including ultrafiltration), and centrifugation, when used in conjunction with the above listed recovery technologies.
RLEAD:	Thermal recovery of lead in secondary lead smelters.
RMERC:	Retorting or roasting in a thermal processing unit capable of volatilizing mercury and subsequently condensing the volatilized mercury for recovery. The retorting or roasting unit (or facility) must be subject to one or more of the following: (a) a National Emissions Standard for Hazardous Air Pollutants (NESHAP) for mercury; (b) a Best Available Control Technology (BACT) or a Lowest Achievable Emission Rate (LAER) standard for mercury imposed pursuant to a Prevention of Significant Deterioration (PSD) permit; or (c) a state permit that establishes emission limitations (within meaning of section 302 of the Clean Air Act) for mercury. All wastewater and nonwastewater residues derived from this process must then comply with the corresponding treatment standards per waste code with consideration of any applicable subcategories (e.g., High or Low Mercury Subcategories).
RMETL:	Recovery of metals or inorganics utilizing one or more of the following direct physical/removal technologies: (1) Ion exchange; (2) resin or solid (i.e., zeolites) adsorption; (3) reverse osmosis; (4) chelation/solvent extraction; (5) freeze crystallization; (6) ultrafiltration and/or (7) simple precipitation (i.e., crystallization) - Note: This does not preclude the use of other physical phase separation or concentration techniques such as decantation, filtration (including ultrafiltration), and centrifugation, when used in conjunction with the above listed recovery technologies.
RORGS:	Recovery of organics utilizing one or more of the following technologies: (1) Distillation; (2) thin film evaporation; (3) steam stripping; (4) carbon adsorption; (5) critical fluid extraction; (6) liquid-liquid extraction; (7) precipitation/crystallization (including freeze crystallization); or (8) chemical phase separation techniques (i.e., addition of acids, bases, demulsifiers, or similar chemicals); - Note: this does not preclude the use of other physical phase separation techniques such as a decantation, filtration (including ultrafiltration), and centrifugation, when used in conjunction with the above listed recovery technologies.
RTHRM:	Thermal recovery of metals or inorganics from nonwastewaters in units identified as industrial furnaces according to 40 CFR 260.10 (1), (6), (7), (11), and (12) under the definition of "industrial furnaces".
RZINC:	Resmelting in high temperature metal recovery units for the purpose of recovery of zinc.
STABL:	Stabilization with the following reagents (or waste reagents) or combinations of reagents: (1) Portland cement; or (2) lime/pozzolans (e.g., fly ash and cement kiln dust) - this does not preclude the addition of reagents (e.g., iron salts, silicates, and clays) designed to enhance the set/cure time and/or compressive strength, or to overall reduce the leachability of the metal or inorganic.

SSTRP:	Steam stripping of organics from liquid wastes utilizing direct application of steam to the wastes operated such that liquid and vapor flow rates, as well as, temperature and pressure ranges have been optimized, monitored, and maintained. These operating parameters are dependent upon the design parameters of the unit such as, the number of separation stages and the internal column design. Thus, resulting in a condensed extract high in organics that must undergo either incineration, reuse as a fuel, or other recovery/reuse and an extracted wastewater that must undergo further treatment as specified in the standard.
WETOX:	Wet air oxidation performed in units operated such that a surrogate compound or indicator parameter has been substantially reduced in concentration in the residuals (e.g., Total Organic Carbon can often be used as an indicator parameter for the oxidation of many organic constituents that cannot be directly analyzed in wastewater residues).
WTRRX:	Controlled reaction with water for highly reactive inorganic or organic chemicals with precautionary controls for protection of workers from potential violent reactions as well as precautionary controls for potential emissions of toxic/ignitable levels of gases released during the reaction.

- (b) [Reserved]
- (c) As an alternative to the otherwise applicable subchapter D treatment standards, lab packs are eligible for land disposal provided the following requirements are met:
- (1) The lab packs comply with the applicable provisions of sections 11-264-316 and 11-265-316;
  - (2) The lab pack does not contain any of the wastes listed in Appendix IV to chapter 11-268.
  - (3) The lab packs are incinerated in accordance with the requirements of chapter 11-264, subchapter O or chapter 11-265, subchapter O; and
  - (4) Any incinerator residues from lab packs containing D004, D005, D006, D007, D008, D010, and D011 are treated in compliance with the applicable treatment standards specified for such wastes in subchapter D.
- (d) Radioactive hazardous mixed wastes are subject to the treatment standards in section 11-268-40. Where treatment standards are specified for radioactive mixed wastes in the Table of Treatment Standards, those treatment standards will govern. Where there is no specific treatment standard for radioactive mixed waste, the treatment standard for the hazardous waste (as designated by EPA waste code) applies. Hazardous debris containing radioactive waste is subject to the treatment standards specified in section 11-268-45. [Eff 6/18/94; am 3/13/99; comp ] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §268.42)

§11-268-43 Treatment standards expressed as waste concentrations.

For the requirements previously found in this section and for treatment standards in Table CCW-Constituent Concentrations in Wastes, refer to section 11-268-40. [Eff 6/18/94; am 3/13/99;

comp ] (Auth: HRS §§342J-4, 342J-31, 342J-35)  
(Imp: 40 C.F.R. §268.43)

§11-268-44 [Reserved]

§11-268-45 Treatment standards for hazardous debris.

(a) Treatment standards. Hazardous debris must be treated prior to land disposal as follows unless the department determines under paragraph 11-261-3(e)(2) that the debris is no longer contaminated with hazardous waste or the debris is treated to the waste-specific treatment standard provided in this subchapter for the waste contaminating the debris:

- (1) General. Hazardous debris must be treated for each "contaminant subject to treatment" defined by subsection (b) of this section using the technology or technologies identified in Table 1 of this section.
- (2) Characteristic debris. Hazardous debris that exhibits the characteristic of ignitability, corrosivity, or reactivity identified under sections 11-261-21, 11-261-22, and 11-261-23, respectively, must be deactivated by treatment using one of the technologies identified in Table 1 of this section.
- (3) Mixtures of debris types. The treatment standards of Table 1 in this section must be achieved for each type of debris contained in a mixture of debris types. If an immobilization technology is used in a treatment train, it must be the last treatment technology used.
- (4) Mixtures of contaminant types. Debris that is contaminated with two or more contaminants subject to treatment identified under subsection (b) of this section must be treated for each contaminant using one or more treatment technologies identified in Table 1 of this section. If an immobilization technology is used in a treatment train, it must be the last treatment technology used.
- (5) Waste PCBs. Hazardous debris that is also a waste PCB under 40 CFR part 761 is subject to the requirements of either 40 CFR part 761 or the requirements of this section, whichever are more stringent.

(b) Contaminants subject to treatment. Hazardous debris must be treated for each "contaminant subject to treatment." The contaminants subject to treatment must be determined as follows:

- (1) Toxicity characteristic debris. The contaminants subject to treatment for debris that exhibits the Toxicity Characteristic (TC) by section 11-261-24 are those EP constituents for which the debris exhibits the TC toxicity characteristic.
- (2) Debris contaminated with listed waste. The contaminants



subject to treatment for debris that is contaminated with a prohibited listed hazardous waste are those constituents or wastes for which treatment standards are established for the waste under section 11-268-40.

- (3) Cyanide reactive debris. Hazardous debris that is reactive because of cyanide must be treated for cyanide.

(c) Conditioned exclusion of treated debris. Hazardous debris that has been treated using one of the specified extraction or destruction technologies in Table 1 of this section and that does not exhibit a characteristic of hazardous waste identified under subchapter C, chapter 11-261, after treatment is not a hazardous waste and need not be managed in a hazardous waste management facility. Hazardous debris contaminated with a listed waste that is treated by an immobilization technology specified in Table 1 is a hazardous waste and must be managed in a hazardous waste management facility.

(d) Treatment residuals-

- (1) General requirements. Except as provided by paragraphs (d)(2) and (d)(4) of this section:

- (i) Residue from the treatment of hazardous debris must be separated from the treated debris using simple physical or mechanical means; and
- (ii) Residue from the treatment of hazardous debris is subject to the waste-specific treatment standards provided by subchapter D of this chapter for the waste contaminating the debris.

(2) Nontoxic debris. Residue from the deactivation of ignitable, corrosive, or reactive characteristic hazardous debris (other than cyanide-reactive) that is not contaminated with a contaminant subject to treatment defined by subsection (b) of this section, must be deactivated prior to land disposal and is not subject to the waste-specific treatment standards of subchapter D of this chapter.

(3) Cyanide-reactive debris. Residue from the treatment of debris that is reactive because of cyanide must meet the standards for D003 under section 11-268-43.

(4) Ignitable nonwastewater residue. Ignitable nonwastewater residue containing equal to or greater than 10% total organic carbon is subject to the technology-based standards for D001: "Ignitable Liquids based on paragraph 11-261-21(a)(1)" under section 11-268-42.

(5) Residue from spalling. Layers of debris removed by spalling are hazardous debris that remain subject to the treatment standards of this section.

Table 1.-Alternative Treatment Standards For Hazardous Debris<sup>1</sup>

Technology description	Performance and/or design and operating standard	Contaminant restrictions <sup>2</sup>
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## A. Extraction Technologies:

## 1. Physical Extraction

a. Abrasive Blasting: Removal of contaminated debris surface layers using water and/or air pressure to propel a solid media (e.g., steel shot, aluminum oxide grit, plastic beads).	Glass, Metal, Plastic, Rubber: Treatment to a clean debris surface. <sup>3</sup> Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Removal of at least 0.6 cm of the surface layer; treatment to a clean debris surface. <sup>3</sup>	All Debris: None.
b. Scarification, Grinding, and Planing: Process utilizing striking piston heads, saws, or rotating grinding wheels such that contaminated debris surface layers are removed.	Same as above	Same as above
c. Spalling: Drilling or chipping holes at appropriate locations and depth in the contaminated debris surface and applying a tool which exerts a force on the sides of those holes such that the surface layer is removed. The surface layer removed remains hazardous debris subject to the debris treatment standards.	Same as above	Same as above
d. Vibratory Finishing: Process utilizing scrubbing media, flushing fluid, and oscillating energy such that hazardous contaminants or contaminated debris surface layers are removed. <sup>4</sup>	Same as above	Same as above
e. High Pressure Steam and Water Sprays: Application of water or steam sprays of sufficient temperature, pressure, residence time, agitation, surfactants, and detergents to remove hazardous contaminants from debris surfaces or to remove contaminated debris surface layers	Same as above	Same as above.

## 2. Chemical Extraction

a. Water Washing and Spraying: Application of water sprays or water baths of sufficient temperature, pressure, residence time, agitation, surfactants, acids, bases, and detergents to remove hazardous contaminants from debris surfaces and surface pores or to remove contaminated debris surface layers.	All Debris: Treatment to a clean debris surface <sup>3</sup> ; Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Debris must be no more than 1.2 cm ( 1/2 inch) in one dimension (i.e., thickness limit, <sup>5</sup> except that this thickness limit may be waived under an "Equivalent Technology" approval under §268.42(b); <sup>8</sup> debris surfaces must be in contact with water solution for at least 15 minutes	Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Contaminant must be soluble to at least 5% by weight in water solution or 5% by weight in emulsion; if debris is contaminated with a dioxin-listed waste, <sup>6</sup> an "Equivalent Technology" approval under §268.42(b) must be obtained. <sup>8</sup>
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b. Liquid Phase Solvent Extraction: Removal of hazardous contaminants from debris surfaces and surface pores by applying a nonaqueous liquid or liquid solution which causes the hazardous contaminants to enter the liquid phase and be flushed away from the debris along with the liquid or liquid solution while using appropriate agitation, temperature, and residence time. <sup>4</sup>	Same as above	Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Same as above, except that contaminant must be soluble to at least 5% by weight in the solvent.
c. Vapor Phase Solvent Extraction: Application of an organic vapor using sufficient agitation, residence time, and temperature to cause hazardous contaminants on contaminated debris surfaces and surface pores to enter the vapor phase and be flushed away with the organic vapor. <sup>4</sup>	Same as above, except that brick, cloth, concrete, paper, pavement, rock and wood surfaces must be in contact with the organic vapor for at least 60 minutes.	Same as above.
3. Thermal Extraction a. High Temperature Metals Recovery: Application of sufficient heat, residence time, mixing, fluxing agents, and/or carbon in a smelting, melting, or refining furnace to separate metals from debris.	For refining furnaces, treated debris must be separated from treatment residuals using simple physical or mechanical means, <sup>9</sup> and, prior to further treatment, such residuals must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris.	Debris contaminated with a dioxin-listed waste: <sup>5</sup> Obtain an "Equivalent Technology" approval under §268.42(b). <sup>8</sup>
b. Thermal Desorption: Heating in an enclosed chamber under either oxidizing or nonoxidizing atmospheres at sufficient temperature and residence time to vaporize hazardous contaminants from contaminated surfaces and surface pores and to remove the contaminants from the heating chamber in a gaseous exhaust gas. <sup>7</sup>	All Debris: Obtain an "Equivalent Technology" approval under §268.42(b). <sup>8</sup> treated debris must be separated from treatment residuals using simple physical or mechanical means, <sup>9</sup> and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris. Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Debris must be no more than 10 cm (4 inches) in one dimension (i.e., thickness limit), <sup>5</sup> except that this thickness limit may be waived under the "Equivalent Technology" approval	All Debris: Metals other than mercury.

B. Destruction Technologies:

<p>1. Biological Destruction (Biodegradation): Removal of hazardous contaminants from debris surfaces and surface pores in an aqueous solution and biodegradation of organic or nonmetallic inorganic compounds (i.e., inorganics that contain phosphorus, nitrogen, or sulfur) in units operated under either aerobic or anaerobic conditions.</p>	<p>All Debris: Obtain an "Equivalent Technology" approval under §268. 42(b);<sup>8</sup> treated debris must be separated from treatment residuals using simple physical or mechanical means,<sup>9</sup> and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris. Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Debris must be no more than 1.2 cm ( 1/2 inch) in one dimension (i.e., thickness limit),<sup>5</sup> except that this thickness limit may be waived under the "Equivalent Technology" approval</p>	<p>All Debris: Metal contaminants.</p>
<p>2. Chemical Destruction</p>		
<p>a. Chemical Oxidation: Chemical or electrolytic oxidation utilizing the following oxidation reagents (or waste reagents) or combination of reagents-(1) hypochlorite (e.g., bleach); (2) chlorine; (3) chlorine dioxide; (4) ozone or UV (ultraviolet light) assisted ozone; (5) peroxides; (6) persulfates; (7) perchlorates; (8) permanganates; and/or (9) other oxidizing reagents of equivalent destruction efficiency.<sup>4</sup> Chemical oxidation specifically includes what is referred to as alkaline chlorination.</p>	<p>All Debris: Obtain an "Equivalent Technology" approval under §268. 42(b);<sup>8</sup> treated debris must be separated from treatment residuals using simple physical or mechanical means,<sup>9</sup> and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris. Brick, Cloth, Concrete, Paper, Pavement, Rock, Wood: Debris must be no more than 1.2 cm ( 1/2 inch) in one dimension (i.e., thickness limit),<sup>5</sup> except that this thickness limit may be waived under the "Equivalent Technology" approval</p>	<p>All Debris: Metal contaminants.</p>
<p>b. Chemical Reduction: Chemical reaction utilizing the following reducing reagents (or waste reagents) or combination of reagents: (1) sulfur dioxide; (2) sodium, potassium, or alkali salts of sulfites, bisulfites, and metabisulfites, and polyethylene glycols (e.g., NaPEG and KPEG); (3) sodium hydrosulfide; (4) ferrous salts; and/or (5) other reducing reagents of equivalent efficiency.<sup>4</sup></p>	<p>Same as above</p>	<p>Same as above.</p>

<p>3. Thermal Destruction: Treatment in an incinerator operating in accordance with Subpart O of Parts 264 or 265 of this chapter; a boiler or industrial furnace operating in accordance with Subpart H of Part 266 of this chapter, or other thermal treatment unit operated in accordance with Subpart X, Part 264 of this chapter, or Subpart P, Part 265 of this chapter, but excluding for purposes of these debris treatment standards Thermal Desorption units.</p>	<p>Treated debris must be separated from treatment residuals using simple physical or mechanical means,<sup>9</sup> and, prior to further treatment, such residue must meet the waste-specific treatment standards for organic compounds in the waste contaminating the debris.</p>	<p>Brick, Concrete, Glass, Metal, Pavement, Rock, Metal: Metals other than mercury, except that there are no metal restrictions for vitrification. Debris contaminated with a dioxin-listed waste.<sup>6</sup> Obtain an "Equivalent Technology" approval under §268.42(b),<sup>8</sup> except that this requirement does not apply to vitrification.</p>
<p>C. Immobilization Technologies:</p>		
<p>1. Macroencapsulation: Application of surface coating materials such as polymeric organics (e.g., resins and plastics) or use of a jacket of inert inorganic materials to substantially reduce surface exposure to potential leaching media.</p>	<p>Encapsulating material must completely encapsulate debris and be resistant to degradation by the debris and its contaminants and materials into which it may come into contact after placement (leachate, other waste, microbes).</p>	<p>None.</p>
<p>2. Microencapsulation: Stabilization of the debris with the following reagents (or waste reagents) such that the leachability of the hazardous contaminants is reduced: (1) Portland cement; or (2) lime/ pozzolans (e.g., fly ash and cement kiln dust). Reagents (e.g., iron salts, silicates, and clays) may be added to enhance the set/cure time and/or compressive strength, or to reduce the leachability of the hazardous constituents.<sup>5</sup></p>	<p>Leachability of the hazardous contaminants must be reduced.</p>	<p>None.</p>
<p>3. Sealing: Application of an appropriate material which adheres tightly to the debris surface to avoid exposure of the surface to potential leaching media. When necessary to effectively seal the surface, sealing entails pretreatment of the debris surface to remove foreign matter and to clean and roughen the surface. Sealing materials include epoxy, silicone, and urethane compounds, but paint may not be used as a sealant</p>	<p>Sealing must avoid exposure of the debris surface to potential leaching media and sealant must be resistant to degradation by the debris and its contaminants and materials into which it may come into contact after placement (leachate, other waste, microbes).</p>	<p>None.</p>

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FOOTNOTE: <sup>1</sup>Hazardous debris must be treated by either these standards or the waste-specific treatment standards for the waste contaminating the debris. The treatment standards must be met for each type of debris contained in a mixture of debris types, unless the debris is converted into treatment

residue as a result of the treatment process. Debris treatment residuals are subject to the waste-specific treatment standards for the waste contaminating the debris.

FOOTNOTE: <sup>2</sup>Contaminant restriction means that the technology is not BDAT for that contaminant. If debris containing a restricted contaminant is treated by the technology, the contaminant must be subsequently treated by a technology for which it is not restricted in order to be land disposed (and excluded from Subtitle C regulation).

FOOTNOTE: <sup>3</sup>"Clean debris surface" means the surface, when viewed without magnification, shall be free of all visible contaminated soil and hazardous waste except that residual staining from soil and waste consisting of light shadows, slight streaks, or minor discolorations, and soil and waste in cracks, crevices, and pits may be present provided that such staining and waste and soil in cracks, crevices, and pits shall be limited to no more than 5% of each square inch of surface area.

FOOTNOTE: <sup>4</sup>Acids, solvents, and chemical reagents may react with some debris and contaminants to form hazardous compounds. For example, acid washing of cyanide-contaminated debris could result in the formation of hydrogen cyanide. Some acids may also react violently with some debris and contaminants, depending on the concentration of the acid and the type of debris and contaminants. Debris treaters should refer to the safety precautions specified in Material Safety Data Sheets for various acids to avoid applying an incompatible acid to a particular debris/contaminant combination. For example, concentrated sulfuric acid may react violently with certain organic compounds, such as acrylonitrile.

FOOTNOTE: <sup>5</sup>If reducing the particle size of debris to meet the treatment standards results in material that no longer meets the 60 mm minimum particle size limit for debris, such material is subject to the waste-specific treatment standards for the waste contaminating the material, unless the debris has been cleaned and separated from contaminated soil and waste prior to size reduction. At a minimum, simple physical or mechanical means must be used to provide such cleaning and separation of nondebris materials to ensure that the debris surface is free of caked soil, waste, or other nondebris material.

FOOTNOTE: <sup>6</sup>Dioxin-listed wastes are EPA Hazardous Waste numbers F020, F021, F022, F023, F026, and F027.

FOOTNOTE: <sup>7</sup>Thermal desorption is distinguished from Thermal Destruction in that the primary purpose of Thermal Desorption is to volatilize contaminants and to remove them from the treatment chamber for subsequent destruction or other treatment.

FOOTNOTE: <sup>8</sup>The demonstration "Equivalent Technology" under §268.42(b) must document that the technology treats contaminants subject to treatment to a level equivalent to that required by the performance and design and operating standards for other technologies in this table such that residual levels of hazardous contaminants will not pose a hazard to human health and the environment absent management controls.

FOOTNOTE: <sup>9</sup>Any soil, waste, and other nondebris material that remains on the debris surface (or remains mixed with the debris) after treatment is considered a treatment residual that must be separated from the debris using, at a minimum, simple physical or mechanical means. Examples of simple physical or mechanical means are vibratory or trommel screening or water washing. The debris surface need not be cleaned to a "clean debris surface" as defined in note 3 when separating treated debris from residue; rather, the surface must be free of caked soil, waste, or other nondebris material. Treatment residuals are subject to the waste-specific treatment standards for the waste contaminating the debris. [Eff 6/18/94; am 3/13/99; comp ] (Auth: HRS §§342J-4, 342J-31, 342J-35)  
(Imp: 40 C.F.R. §268.45)

§11-268-46 Alternative treatment standards based on HTMR.  
For the treatment standards previously found in this section, refer to section 11-268-40. [Eff 6/18/94; am 3/13/99; comp ] (Auth: HRS §§342J-4, 342J-31, 342J-35)  
(Imp: 40 C.F.R. §268.46)

§11-268-48 Universal treatment standards. (a) Table UTS identifies the hazardous constituents, along with the nonwastewater and wastewater treatment standard levels, that are used to regulate most prohibited hazardous wastes with numerical limits. For determining compliance with treatment standards for underlying hazardous constituents as defined in section 11-268-2(i), these treatment standards may not be exceeded. Compliance with these treatment standards is measured by an analysis of grab samples, unless otherwise noted in the following Table UTS.

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Universal Treatment Standard  
(Note: NA means not applicable.)

Regulated constituent/common name	CAS <sup>1</sup> number	Wastewater standard	Nonwastewa ter standard
		Concentrat ion in mg/l <sup>2</sup>	Concentrat ion in mg/kg <sup>3</sup> unless noted as "mg/l TCLP"
I. Organic Constituents			
A2213 <sup>6</sup> . . . . .	30558- 43-1	0.042	1.4
Acenaphthylene . . . . .	208-96-8	0.059	3.4
Acenaphthene . . . . .	83-32-9	0.059	3.4
Acetone . . . . .	67-64-1	0.28	160
Acetonitrile . . . . .	75-05-8	5.6	38
Acetophenone . . . . .	96-86-2	0.010	9.7
2-Acetylaminofluorene . . . . .	53-96-3	0.059	140
Acrolein . . . . .	107-02-8	0.29	NA
Acrylamide . . . . .	79-06-1	19	23
Acrylonitrile . . . . .	107-13-1	0.24	84

Aldicarb sulfone <sup>6</sup> . . . . .	1646-88-4	0.056	0.28
Aldrin . . . . .	309-00-2	0.021	0.066
4-Aminobiphenyl . . . . .	92-67-1	0.13	NA
Aniline . . . . .	62-53-3	0.81	14
Anthracene . . . . .	120-12-7	0.059	3.4
Aramite . . . . .	140-57-8	0.36	NA
alpha-BHC . . . . .	319-84-6	0.00014	0.066
beta-BHC . . . . .	319-85-7	0.00014	0.066
delta-BHC . . . . .	319-86-8	0.023	0.066
gamma-BHC . . . . .	58-89-9	0.0017	0.066
Barban <sup>6</sup> . . . . .	101-27-9	0.056	1.4
Bendiocarb <sup>6</sup> . . . . .	22781-23-3	0.056	1.4
Bendiocarb phenol <sup>6</sup> . . . . .	22961-82-6	0.056	1.4
Benomyl <sup>6</sup> . . . . .	17804-35-2	0.056	1.4
Benzene . . . . .	71-43-2	0.14	10
Benz(a)anthracene . . . . .	56-55-3	0.059	3.4
Benzal chloride . . . . .	98-87-3	0.055	6.0
Benzo(b)fluoranthene (difficult to distinguish from benzo(k)fluoranthene)	205-99-2	0.11	6.8

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Benzo(k)fluoranthene (difficult to distinguish from benzo(b)fluoranthene)	207-08-9	0.11	6.8
Benzo(g,h,i)perylene . . . . .	191-24-2	0.0055	1.8
Benzo(a)pyrene . . . . .	50-32-8	0.061	3.4
Bromodichloromethane . . . . .	75-27-4	0.35	15
Bromomethane/Methyl bromide . . . . .	74-83-9	0.11	15
4-Bromophenyl phenyl ether . . . . .	101-55-3	0.055	15
n-Butyl alcohol . . . . .	71-36-3	5.6	2.6
Butylate <sup>6</sup> . . . . .	2008-41-5	0.042	1.4
Butyl benzyl phthalate . . . . .	85-68-7	0.017	28
2-sec-Butyl-4,6-dinitrophenol/Dinoseb .	88-85-7	0.066	2.5
Carbaryl <sup>6</sup> . . . . .	63-25-2	0.006	0.14
Carbenzadim <sup>6</sup> . . . . .	10605-21-7	0.056	1.4
Carbofuran <sup>6</sup> . . . . .	1563-66-2	0.006	0.14
Carbofuran phenol <sup>6</sup> . . . . .	1563-38-8	0.056	1.4
Carbon disulfide . . . . .	75-15-0	3.8	4.8 mg/l TCLP
Carbon tetrachloride . . . . .	56-23-5	0.057	6.0
Carbosulfan <sup>6</sup> . . . . .	55285-14-8	0.028	1.4

Chlordane (alpha and gamma isomers) . .	57-74-9	0.0033	0.26
p-Chloroaniline . . . . .	106-47-8	0.46	16
Chlorobenzene . . . . .	108-90-7	0.057	6.0
Chlorobenzilate . . . . .	510-15-6	0.10	NA
2-Chloro-1,3-butadiene . . . . .	126-99-8	0.057	0.28
Chlorodibromomethane . . . . .	124-48-1	0.057	15
Chloroethane . . . . .	75-00-3	0.27	6.0
bis(2-Chloroethoxy)methane . . . . .	111-91-1	0.036	7.2
bis(2-Chloroethyl)ether . . . . .	111-44-4	0.033	6.0
Chloroform . . . . .	67-66-3	0.046	6.0
bis(2-Chloroisopropyl)ether . . . . .	39638-32-9	0.055	7.2
p-Chloro-m-cresol . . . . .	59-50-7	0.018	14
2-Chloroethyl vinyl ether . . . . .	110-75-8	0.062	NA
Chloromethane/Methyl chloride . . . . .	74-87-3	0.19	30
2-Chloronaphthalene . . . . .	91-58-7	0.055	5.6
2-Chlorophenol . . . . .	95-57-8	0.044	5.7
3-Chloropropylene . . . . .	107-05-1	0.036	30
Chrysene . . . . .	218-01-9	0.059	3.4
o-Cresol . . . . .	95-48-7	0.11	5.6
m-Cresol (difficult to distinguish from p-cresol) . . . . .	108-39-4	0.77	5.6

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p-Cresol (difficult to distinguish from m-cresol) . . . . .	106-44-5	0.77	5.6
m-Cumenyl methylcarbamate <sup>6</sup> . . . . .	64-00-6	0.056	1.4
Cyclohexanone . . . . .	108-94-1	0.36	0.75 mg/l TCLP
o,p'-DDD . . . . .	53-19-0	0.023	0.087
p,p'-DDD . . . . .	72-54-8	0.023	0.087
o,p'-DDE . . . . .	3424-82-6	0.031	0.087
p,p'-DDE . . . . .	72-55-9	0.031	0.087
o,p'-DDT . . . . .	789-02-6	0.0039	0.087
p,p'-DDT . . . . .	50-29-3	0.0039	0.087
Dibenz(a,h)anthracene . . . . .	53-70-3	0.055	8.2
Dibenz(a,e)pyrene . . . . .	192-65-4	0.061	NA
1,2-Dibromo-3-chloropropane . . . . .	96-12-8	0.11	15
1,2-Dibromoethane/Ethylene dibromide .	106-93-4	0.028	15
Dibromomethane . . . . .	74-95-3	0.11	15
m-Dichlorobenzene . . . . .	541-73-1	0.036	6.0
o-Dichlorobenzene . . . . .	95-50-1	0.088	6.0
p-Dichlorobenzene . . . . .	106-46-7	0.090	6.0
Dichlorodifluoromethane . . . . .	75-71-8	0.23	7.2
1,1-Dichloroethane . . . . .	75-34-3	0.059	6.0
1,2-Dichloroethane . . . . .	107-06-2	0.21	6.0

1,1-Dichloroethylene . . . . .	75-35-4	0.025	6.0
trans-1,2-Dichloroethylene . . . . .	156-60-5	0.054	30
2,4-Dichlorophenol . . . . .	120-83-2	0.044	14
2,6-Dichlorophenol . . . . .	87-65-0	0.044	14
2,4-Dichlorophenoxyacetic acid/2,4-D .	94-75-7	0.72	10
1,2-Dichloropropane . . . . .	78-87-5	0.85	18
cis-1,3-Dichloropropylene . . . . .	10061-01-5	0.036	18
trans-1,3-Dichloropropylene . . . . .	10061-02-6	0.036	18
Dieldrin . . . . .	60-57-1	0.017	0.13
Diethylene glycol, dicarbamate <sup>6</sup> . . .	5952-26-1	0.056	1.4
Diethyl phthalate . . . . .	84-66-2	0.20	28
p-Dimethylaminoazobenzene . . . . .	60-11-7	0.13	NA
2-4-Dimethyl phenol . . . . .	105-67-9	0.036	14
Dimethyl phthalate . . . . .	131-11-3	0.047	28
Dimetilan <sup>6</sup> . . . . .	644-64-4	0.056	1.4
Di-n-butyl phthalate . . . . .	84-74-2	0.057	28
1,4-Dinitrobenzene . . . . .	100-25-4	0.32	2.3
4,6-Dinitro-o-cresol . . . . .	534-52-1	0.28	160
2,4-Dinitrophenol . . . . .	51-28-5	0.12	160
2,4-Dinitrotoluene . . . . .	121-14-2	0.32	140

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2,6-Dinitrotoluene . . . . .	606-20-2	0.55	28
Di-n-octyl phthalate . . . . .	117-84-0	0.017	28
Di-n-propylnitrosamine . . . . .	621-64-7	0.40	14
1,4-Dioxane . . . . .	123-91-1	12.0	170
Diphenylamine (difficult to distinguish from diphenylnitrosamine) . . . . .	122-39-4	0.92	13
Diphenylnitrosamine (difficult to distinguish from diphenylamine) . . . . .	86-30-6	0.92	13
1,2-Diphenylhydrazine . . . . .	122-66-7	0.087	NA
Disulfoton . . . . .	298-04-4	0.017	6.2
Dithiocarbamates (total) <sup>6</sup> . . . . .	137-30-4	0.028	28
Endosulfan I . . . . .	959-98-8	0.023	0.066
Endosulfan II . . . . .	33213- 65-9	0.029	0.13
Endosulfan sulfate . . . . .	1031-07- 8	0.029	0.13
Endrin . . . . .	72-20-8	0.0028	0.13
Endrin aldehyde . . . . .	7421-93- 4	0.025	0.13
EPTC <sup>6</sup> . . . . .	759-94-4	0.042	1.4
Ethyl acetate . . . . .	141-78-6	0.34	33
Ethyl benzene . . . . .	100-41-4	0.057	10
Ethyl cyanide/Propanenitrile . . . . .	107-12-0	0.24	360

Ethyl ether . . . . .	60-29-7	0.12	160
bis(2-Ethylhexyl) phthalate . . . . .	117-81-7	0.28	28
Ethyl methacrylate . . . . .	97-63-2	0.14	160
Ethylene oxide . . . . .	75-21-8	0.12	NA
Famphur . . . . .	52-85-7	0.017	15
Fluoranthene . . . . .	206-44-0	0.068	3.4
Fluorene . . . . .	86-73-7	0.059	3.4
Formetanate hydrochloride <sup>6</sup> . . . . .	23422-53-9	0.056	1.4
Formparanate <sup>6</sup> . . . . .	17702-57-7	0.056	1.4
Heptachlor . . . . .	76-44-8	0.0012	0.066
Heptachlor epoxide . . . . .	1024-57-3	0.016	0.066
Hexachlorobenzene . . . . .	118-74-1	0.055	10
Hexachlorobutadiene . . . . .	87-68-3	0.055	5.6
Hexachlorocyclopentadiene . . . . .	77-47-4	0.057	2.4
HxCDDs (All Hexachlorodibenzo-p-dioxins) . . . . .	NA	0.000063	0.001
HxCDFs (All Hexachlorodibenzofurans) . . . . .	NA	0.000063	0.001
Hexachloroethane . . . . .	67-72-1	0.055	30
Hexachloropropylene . . . . .	1888-71-7	0.035	30



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Indeno (1,2,3-c,d) pyrene . . . . .	193-39-5	0.0055	3.4
Iodomethane . . . . .	74-88-4	0.19	65
Isobutyl alcohol . . . . .	78-83-1	5.6	170
Isodrin . . . . .	465-73-6	0.021	0.066
Isolan <sup>6</sup> . . . . .	119-38-0	0.056	1.4
Isosafrole . . . . .	120-58-1	0.081	2.6
Kepone . . . . .	143-50-0	0.0011	0.13
Methacrylonitrile . . . . .	126-98-7	0.24	84
Methanol . . . . .	67-56-1	5.6	0.75 mg/l TCLP
Methapyrilene . . . . .	91-80-5	0.081	1.5
Methiocarb <sup>6</sup> . . . . .	2032-65- 7	0.056	1.4
Methomyl <sup>6</sup> . . . . .	16752- 77-5	0.028	0.14
Methoxychlor . . . . .	72-43-5	0.25	0.18
3-Methylcholanthrene . . . . .	56-49-5	0.0055	15
4,4-Methylene bis(2-chloroaniline) . .	101-14-4	0.50	30
Methylene chloride . . . . .	75-09-2	0.089	30
Methyl ethyl ketone . . . . .	78-93-3	0.28	36
Methyl isobutyl ketone . . . . .	108-10-1	0.14	33
Methyl methacrylate . . . . .	80-62-6	0.14	160
Methyl methansulfonate . . . . .	66-27-3	0.018	NA

Methyl parathion . . . . .	298-00-0	0.014	4.6
Metolcarb <sup>6</sup> . . . . .	1129-41-5	0.056	1.4
Mexacarbate <sup>6</sup> . . . . .	315-18-4	0.056	1.4
Molinate <sup>6</sup> . . . . .	2212-67-1	0.042	1.4
Naphthalene . . . . .	91-20-3	0.059	5.6
2-Naphthylamine . . . . .	91-59-8	0.52	NA
o-Nitroaniline . . . . .	88-74-4	0.27	14
p-Nitroaniline . . . . .	100-01-6	0.028	28
Nitrobenzene . . . . .	98-95-3	0.068	14
5-Nitro-o-toluidine . . . . .	99-55-8	0.32	28
o-Nitrophenol . . . . .	88-75-5	0.028	13
p-Nitrophenol . . . . .	100-02-7	0.12	29
N-Nitrosodiethylamine . . . . .	55-18-5	0.40	28
N-Nitrosodimethylamine . . . . .	62-75-9	0.40	2.3
N-Nitroso-di-n-butylamine . . . . .	924-16-3	0.40	17
N-Nitrosomethylethylamine . . . . .	10595-95-6	0.40	2.3
N-Nitrosomorpholine . . . . .	59-89-2	0.40	2.3
N-Nitrosopiperidine . . . . .	100-75-4	0.013	35
N-Nitrosopyrrolidine . . . . .	930-55-2	0.013	35

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Oxamyl <sup>6</sup> . . . . .	23135- 22-0	0.056	0.28
Parathion . . . . .	56-38-2	0.014	4.6
Total PCBs (sum of all PCB isomers, or all Aroclors) . . . . .	1336-36- 3	0.10	10
Pebulate <sup>6</sup> . . . . .	1114-71- 2	0.042	1.4
Pentachlorobenzene . . . . .	608-93-5	0.055	10
PeCDDs (All Pentachlorodibenzo-p- dioxins) . . . . .	NA	0.000063	0.001
PeCDFs (All Pentachlorodibenzofurans) .	NA	0.000035	0.001
Pentachloroethane . . . . .	76-01-7	0.055	6.0
Pentachloronitrobenzene . . . . .	82-68-8	0.055	4.8
Pentachlorophenol . . . . .	87-86-5	0.089	7.4
Phenacetin . . . . .	62-44-2	0.081	16
Phenanthrene . . . . .	85-01-8	0.059	5.6
Phenol . . . . .	108-95-2	0.039	6.2
o-Phenylenediamine <sup>6</sup> . . . . .	95-54-5	0.056	5.6
Phorate . . . . .	298-02-2	0.021	4.6
Phthalic acid . . . . .	100-21-0	0.055	28
Phthalic anhydride . . . . .	85-44-9	0.055	28
Physostigmine <sup>6</sup> . . . . .	57-47-6	0.056	1.4
Physostigmine salicylate <sup>6</sup> . . . . .	57-64-7	0.056	1.4

Promecarb <sup>6</sup> . . . . .	2631-37-0	0.056	1.4
Pronamide . . . . .	23950-58-5	0.093	1.5
Propham <sup>6</sup> . . . . .	122-42-9	0.056	1.4
Propoxur <sup>6</sup> . . . . .	114-26-1	0.056	1.4
Prosulfocarb <sup>6</sup> . . . . .	52888-80-9	0.042	1.4
Pyrene . . . . .	129-00-0	0.067	8.2
Pyridine . . . . .	110-86-1	0.014	16
Safrole . . . . .	94-59-7	0.081	22
Silvex/2,4,5-TP . . . . .	93-72-1	0.72	7.9
1,2,4,5-Tetrachlorobenzene . . . . .	95-94-3	0.055	14
TCDDs (All Tetrachlorodibenzo-p-dioxins) . . . . .	NA	0.000063	0.001
TCDFs (All Tetrachlorodibenzofurans) . . . . .	NA	0.000063	0.001
1,1,1,2-Tetrachloroethane . . . . .	630-20-6	0.057	6.0
1,1,2,2-Tetrachloroethane . . . . .	79-34-5	0.057	6.0
Tetrachloroethylene . . . . .	127-18-4	0.056	6.0
2,3,4,6-Tetrachlorophenol . . . . .	58-90-2	0.030	7.4
Thiodicarb <sup>6</sup> . . . . .	59669-26-0	0.019	1.4
Thiophanate-methyl <sup>6</sup> . . . . .	23564-05-8	0.056	1.4

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Tirpate <sup>6</sup> . . . . .	26419- 73-8	0.056	0.28
Toluene . . . . .	108-88-3	0.080	10
Toxaphene . . . . .	8001-35- 2	0.0095	2.6
Triallate <sup>6</sup> . . . . .	2303-17- 5	0.042	1.4
Tribromomethane/Bromoform . . . . .	75-25-2	0.63	15
1,2,4-Trichlorobenzene . . . . .	120-82-1	0.055	19
1,1,1-Trichloroethane . . . . .	71-55-6	0.054	6.0
1,1,2-Trichloroethane . . . . .	79-00-5	0.054	6.0
Trichloroethylene . . . . .	79-01-6	0.054	6.0
Trichloromonofluoromethane . . . . .	75-69-4	0.020	30
2,4,5-Trichlorophenol . . . . .	95-95-4	0.18	7.4
2,4,6-Trichlorophenol . . . . .	88-06-2	0.035	7.4
2,4,5-Trichlorophenoxyacetic acid/2,4,5-T . . . . .	93-76-5	0.72	7.9
1,2,3-Trichloropropane . . . . .	96-18-4	0.85	30
1,1,2-Trichloro-1,2,2-trifluoroethane .	76-13-1	0.057	30
Triethylamine <sup>6</sup> . . . . .	101-44-8	0.081	1.5
tris-(2,3-Dibromopropyl) phosphate . .	126-72-7	0.11	0.10
Vernolate <sup>6</sup> . . . . .	1929-77- 7	0.042	1.4

Vinyl chloride . . . . .	75-01-4	0.27	6.0	
Xylenes-mixed isomers (sum of o-, m-, and p-xylene concentrations) . . . . .	1330-20-7	0.32	30	
II. Inorganic Constituents				
Antimony . . . . .	7440-36-0	1.9	2.1	mg/l TCLP
Arsenic . . . . .	7440-38-2	1.4	5.0	mg/l TCLP
Barium . . . . .	7440-39-3	1.2	7.6	mg/l TCLP
Beryllium . . . . .	7440-41-7	0.82	0.014	mg/l TCLP
Cadmium . . . . .	7440-43-9	0.69	0.19	mg/l TCLP
Chromium (Total) . . . . .	7440-47-3	2.77	0.86	mg/l TCLP
Cyanides (Total) <sup>4</sup> . . . . .	57-12-5	1.2	590	
Cyanides (Amenable) <sup>4</sup> . . . . .	57-12-5	0.86	30	
Fluoride <sup>5</sup> . . . . .	16984-48-8	35	NA	
Lead . . . . .	7439-92-1	0.69	0.37	mg/l TCLP
Mercury - Nonwastewater from Retort . .	7439-97-6	NA	0.20	mg/l TCLP
Mercury - All Others . . . . .	7439-97-6	0.15	0.025	mg/l TCLP

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Nickel . . . . .	7440-02-0	3.98	5.0 mg/l TCLP
Selenium . . . . .	7782-49-2	0.82	0.16 mg/l TCLP
Silver . . . . .	7440-22-4	0.43	0.30 mg/l TCLP
Sulfide . . . . .	18496-25-8	14	NA
Thallium . . . . .	7440-28-0	1.4	0.078 mg/l TCLP
Vanadium <sup>5</sup> . . . . .	7440-62-2	4.3	0.23 mg/l TCLP
Zinc <sup>5</sup> . . . . .	7440-66-6	2.61	5.3 mg/l TCLP

## Footnotes to Universal Treatment Standards Table:

- <sup>1</sup> CAS means Chemical Abstract Services. When the waste code and/or regulated constituents are described as a combination of a chemical with it's salts and/or esters, the CAS number is given for the parent compound only.<sup>44</sup>
  - <sup>2</sup> Concentration standards for wastewaters are expressed in mg/l and are based on analysis of composite samples.
  - <sup>3</sup> Except for Metals (EP or TCLP) and Cyanides (Total and Amenable) the nonwastewater treatment standards expressed as a concentration were established, in part, based upon incineration in units operated in accordance with the technical requirements of 40 CFR part 264, subpart O or 40 CFR part 265, subpart O, or based upon combustion in fuel substitution units operating in accordance with applicable technical requirements. A facility may comply with these treatment standards according to provisions in §268.40(d). All concentration standards for nonwastewaters are based on analysis of grab samples.
  - <sup>4</sup> Both Cyanides (Total) and Cyanides (Amenable) for nonwastewaters are to be analyzed using Method 9010 or 9012, found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846, as incorporated by reference in 40 CFR 260.11, with a sample size of 10 grams and a distillation time of one hour and 15 minutes.
  - <sup>5</sup> These constituents are not "underlying hazardous constituents" in characteristic wastes, according to the definition at §268.2(i).
  - <sup>6</sup> Between August 26, 1997, and August 26, 1998, these constituents are not "underlying hazardous constituents" as defined at §268.2(i). [Eff 6/18/94; am 3/13/99; comp  
] (Auth: HRS §§342J-4, 342J-31, 342J-35)  
(Imp: 40 C.F.R. §268.48)
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SUBCHAPTER E

PROHIBITIONS ON STORAGE

§11-268-50 Prohibitions on storage of restricted wastes.

(a) Except as provided in this section, the storage of hazardous wastes restricted from land disposal under subchapter C of this chapter or RCRA section 3004 (42 U.S.C. 6924) (1984) is prohibited, unless the following conditions are met:

(1) A generator stores such wastes in tanks, containers, or containment buildings on-site solely for the purpose of the accumulation of such quantities of hazardous waste as necessary to facilitate proper recovery, treatment, or disposal and the generator complies with the requirements in section 11-262-34 and chapters 11-264 and 11-265.

(2) An owner/operator of a hazardous waste treatment, storage, or disposal facility stores such wastes in tanks, containers, or containment buildings solely for the purpose of the accumulation of such quantities of hazardous waste as necessary to facilitate proper recovery, treatment, or disposal and:

(i) Each container is clearly marked to identify its contents and the date each period of accumulation begins;

(ii) Each tank is clearly marked with a description of its contents, the quantity of each hazardous waste received, and the date each period of accumulation begins, or such information for each tank is recorded and maintained in the operating record at that facility. Regardless of whether the tank itself is marked, an owner/operator must comply with the operating record requirements specified in section 11-264-73 or 11-265-73.

(3) A transporter stores manifested shipments of such wastes at a transfer facility for ten days or less.

(b) An owner/operator of a treatment, storage or disposal facility may store such wastes for up to one year unless the department can demonstrate that such storage was not solely for the purpose of accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal.

(c) An owner/operator of a treatment, storage or disposal facility may store such wastes beyond one year; however, the owner/operator bears the burden of proving that such storage was solely for the purpose of accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal.

(d) If a generator's waste is exempt from a prohibition on the type of land disposal utilized for the waste (for example, a

national capacity variance under Subpart C of 40 CFR 268), the prohibition in subsection (a) does not apply during the period of such exemption.

(e) The prohibition in subsection (a) does not apply to hazardous wastes that meet the treatment standards specified under sections 11-268-41, 11-268-42, and 11-268-43, or, where treatment standards have not been specified, is in compliance with the applicable prohibitions specified in section 11-268-32 or RCRA section 3004 (42 U.S.C. 6924) (1984).

(f) Liquid hazardous wastes containing polychlorinated biphenyls (PCBs) at concentrations greater than or equal to fifty ppm must be stored at a facility that meets the requirements of 40 CFR 761.65(b) and must be removed from storage and treated or disposed as required by this chapter within one year of the date when such wastes are first placed into storage. The provisions of subsection (c) do not apply to such PCB wastes prohibited under section 11-268-32. [Eff 6/19/94; comp ] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: 40 C.F.R. §268.50)

§11-268-51 Effect of approvals pursuant to 40 CFR 268.5, 268.6, 268.42(b), and 268.44. An approval by EPA pursuant to 40 CFR 268.5 (procedures for case-by-case extensions to an effective date), 40 CFR 268.6 (petitions to allow land disposal of a waste prohibited under subpart C of 40 CFR Part 268), 40 CFR 268.42(b) (alternative treatment methods), or 40 CFR 268.44 (variance from a treatment standard) shall not constitute an approval by the State unless the department adopts the approval by rule(s) promulgated pursuant to chapter 91, HRS. [Eff 3/13/99; comp ] (Auth: HRS §§342J-4, 342J-31, 342J-35) (Imp: None)

## SUBCHAPTER F

### APPENDICES

§11-268-60 Appendices. Appendices I through VI, VIII, IX, and XI to 40 CFR Part 268, revised as of May 25, 1998, are made a part of this chapter. These Appendices are entitled:

Appendix I -- [Reserved]

Appendix II -- [Reserved]

Appendix III -- [Reserved]

Appendix IV -- Wastes Excluded From Lab Packs Under the Alternative Treatment Standards of Section 11-268-42(c)

Appendix V -- [Reserved]

Appendix VI -- Recommended Technologies to Achieve Deactivation of Characteristics in Section 11-268-42

Appendix VIII -- National Capacity LDR Variances for UIC Wastes

Appendix IX -- Extraction Procedure (EP) Toxicity Test Method and

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Structural Integrity Test (Method 1310)  
Appendix X -- [Reserved]  
Appendix XI -- Metal Bearing Wastes Prohibited From Dilution in a  
Combustion Unit According to Section 11-268-3(c) [Eff  
6/18/94; am 3/13/99; comp ] (Auth: HRS §§342J-4,  
342J-31, 342J-35) (Imp: None)